

The Neutron Star Interior Composition Explorer (NICER)

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The Neutron Star Interior Composition Explorer (NICER) is an approved NASA Explorer Mission of Opportunity dedicated to the study of the extraordinary gravitational, electromagnetic, and nuclear-physics environments embodied by neutron stars. Scheduled to be launched in 2016 as an International Space Station payload, NICER will explore the exotic states of matter, using rotation-resolved spectroscopy of the thermal and non-thermal emissions of neutron stars in the soft (0.2-12 keV) X-ray band. Grazing-incidence “concentrator” optics coupled with silicon drift detectors, actively pointed for a full hemisphere of sky coverage, will provide photon-counting spectroscopy and timing registered to GPS time and position, with high throughput and relatively low background. The NICER project plans to implement a Guest Observer Program, which includes competitively selected user targets after the first year of flight operations. I will describe NICER and discuss ideas for potential Be/X-ray binary science.